NR 445 Technical Advisory Group

Proposal For Control Of Emissions From Compressed-Ignition Internal Combustion Engines Combusting Fuel Oil

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Purpose

- To Lay Out & Explain Basis For Proposal To Reduce Emissions Of Particulate Matter (PM) From Combustion Of Fuel Oil In Compressed-Ignition Internal Combustion Engines.
- Considers Comments Received From Stakeholders Since Original Proposal (April 2001)

Applicability

- Emissions From Stationary Sources
  - Compressed-ignition internal combustion engines burning fuel oil
  - 100 Horsepower (HP) and greater
- Exempt engines
  - Emergency electric generators (3000 kilowatts or less operating no more than 200 hours per year)
  - Used to provide essential human services

What Type of Engine Applications Are Affected?

- A Facility Which Test Engines They Either Manufacture and/or Assemble Into Original Equipment
- An Engine(s) Used In A Portable Application
- An Engine(s) Remaining At A Fixed Location For 12 Consecutive Months Or More *
- An Engine(s) Operating At A Seasonal Site For 3 Months Or More *

* includes replacement engines

How Are Replacement Engines Treated?

- A Replacement Engine Is One That Replaces An Engine At A Fixed Location Or Seasonal Site And That Is Intended To Perform The Same Or Similar Function

- These Engines Are Included For Determining:
  - Stays for consecutive periods of time
  - Annual fuel use

What Is A Seasonal Site?

- A Seasonal Site Is A Location At Which An Engine(s) Remains, Or Returns To, For 2 Or More Consecutive Years Or Operating Seasons
  - Example:
    - canning operations

Requirements

- All Affected Applications (non-exempt ≥100 Horsepower)
  - On-road fuel oil
- Engines At A Test Facility, Fixed Location or Seasonal Site Combusting 40,000 Gals. Or More A Year Fuel Oil
  - Particulate matter (PM) controls applied to facility emissions or to engines (add-on controls)

What Level Of PM Control Would Be Required?

- Individual Engine(s)
  - Existing: equipped with a device certified by California Air Resources Board, the US EPA, or as approved by DNR using equivalent test method
  - New & Modified: Best Available Control Technology (BACT)
    - add-on controls (engine)
    - commercially available new engine designs

What Level Of PM Control Would Be Required?

- Facilities That Test Engines They Manufacture and/or Assemble Into Original Equipment
  - New, Modified and Existing: Best Available Control Technology (BACT)
    - control technology (facility)
    - new engine designs

Timing

- On-Road Fuel Oil
  - Beginning 6 months after effective date of rule
- Existing Source Controls
  - No later than 36 months after effective date of rule
- New & Modified Sources
  - Upon start-up

Permit Requirements

- Existing Source:
  - Facility subject to BACT would be reviewed as part of a revision to an operating permit
  - Engine(s) subject to control requirements would certify compliance
  - Engine(s) without control requirements maintain records of fuel use
- New & Modified Source Subject To BACT
  - Would be reviewed under construction permit

How Were The Engine & Fuel Levels Chosen?

- 100 HP & 40,000 Gallons Per Year Were Determined To Be Equivalent To The Annual PM Impact Allowed By Existing Permit Exemption Level
  - 3000 kilowatts = (approx.) 3950 HP
  - 3950 HP x 200 hrs. x ___ grams/HP-hr = ___ lbs./yr.
  - ___ lbs./yr. / ___ lbs./1000 Btu